

Title (en)
ULTRA-SENSITIVE DETECTION OF CONTAMINANTS IN GAS VIA INTRACAVITY LASER SPECTROSCOPY (ILS)

Title (de)
HOCHEMPFLINDLICHER NACHWEIS VON GAS-VERUNREINIGUNGEN DURCH SPEKTROSKOPIE INNERHALB DES LASER-RESONATORS

Title (fr)
DETECTION ULTRASENSIBLE DE CONTAMINANTS DANS UN GAZ PAR LA SPECTROSCOPIE LASER INTRACAVITE

Publication
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Application
EP 96932147 A 19960829

Priority

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- US 9613879 W 19960829

Abstract (en)
[origin: WO9709607A1] Contaminants in gases such as corrosives are detected optically at concentrations below 1 part-per-million (ppm) and extending to a level below 1 part-per-trillion (ppb) by using intracavity laser spectroscopy (ILS) techniques. A laser (500), the ILS laser (500), is employed as a detector (10). The ILS laser (500) comprises a gain medium (507) contained in a laser cavity (5). A gas sample containing gaseous contaminant species is contained within a gas sample cell (406) which is placed inside the laser cavity (5) and on one side of the gain medium (406). In the case where gaseous species are to be detected in corrosive gas, the corrosive gas is prevented from reacting with the components of the ILS laser (500). The output signal from the ILS laser (500) is detected and analyzed to identify the gaseous species (via its spectral signature). The concentration of the gaseous species can be determined from the spectral signature as well.

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